

33. (Amended) The paper support according to claim 29, in which the adhesive layer is prepared by uniformly dispersing an adhesive, and if desired at least one member selected from the group consisting of a fluorescent dye, a fluorescent pigment and a luminescent pigment, in water or an organic solvent serving as a medium to obtain a coating composition for forming an adhesive layer, applying the resulting coating composition to the ribbon-shaped security element in an amount of about 1 g/m² to about 10 g/m² on a dry weight basis, and drying the resulting coating.

REMARKS

The claims have been amended to delete the thread-shaped security element from the scope of the security element useful in the recording paper of the present invention and to precisely recite the characteristics of the recording paper.

Support for the amendments to claims 1 and 20 can be found on page 13, lines 13 to 15, on page 13, line 20 to page 14, line 7, on page 14, lines 17 to 19, on page 16, line 25 to page 17, line 6, and on page 21, lines 9 to 12 in the present specification.

In conformity with the amendments to claims 1 and 20, claims 2-5, 15, 17, 18, and 21-24 have been deleted, and claims 9, 14, 16, 28, and 33 have been amended.

Support for the amendments to claim 30 can be found on page 18, lines 9 to 14, in the present specification.

The invention of the present application as recited in claim 1 as amended is a recording paper comprising a paper support, and a recording layer formed on the paper support, the paper support having a ribbon-shaped security element embedded therein and characterized in that:

the distance from the front surface (on the recording layer side) of the paper support to the front surface (on the recording layer side) of the security element is 1 to 7 times the thickness of the security element;

the distance from the rear surface (the surface opposite of the front surface on the recording layer side) of the paper support to the rear surface (the surface opposite of the front surface on the recording layer side) of the security element is 0.5 to 6 times the thickness of the security element;

the thickness of the paper support is 4 times to 10 times the thickness of the ribbon-shaped security element;

the thickness of the paper support is 40 to 250 μm ;

the ribbon-shaped security element has a width of 0.3 mm to 20 mm and a thickness of 10 μm to 80 μm ; and

the recording layer is a heat-sensitive recording layer comprising an electron-donating compound, an electron- accepting compound and a binder.

The invention of the present application as recited in claim 20 is directed to a paper support for a recording paper, the paper support having a ribbon-shaped security element embedded therein; characterized in that the paper support and the ribbon-shaped security element each has a predetermined size, and the ribbon-shaped security element is located in a predetermined position inside the paper support, as described in claim 1.

The recording paper of the present invention comprising a paper support having a ribbon-shaped security element embedded therein as a counterfeit prevention element has little uneven thickness and creates recorded images with excellent quality.

Referring to the Action, claims 1-33 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. First, the Office has taken the position that diameter and thickness cannot be compared, because diameter measures circumference and thickness is a planar measurement.

It appears that this rejection is due to a misunderstanding, because "diameter" and "thickness" are both linear measurements and can be compared to one another. However, this rejection is now moot in view of the amendments to the claims deleting the term "thread-shaped security element" from the claims.

Second, regarding the position of the Office that the terminology "thread-shaped" and "ribbon-shaped" in claims 1, 5-7, 9, 14, 20, 24-26, 28 and 33 renders the claims indefinite, the term "thread-shaped" no longer appears in the claims and a person of ordinary skill in the art can readily determine whether a "security element" embedded in a paper support has the shape of a a ribbon. Applicants note that a word-search of the USPTO database located

184 patents issued since 1976 that use the terminology "ribbon-shaped" in the claims.

Additionally, amended Claims 1 and 20 now include limitations relating to the dimensions of "ribbon-shaped security element". For these reasons, the meaning of the term "ribbon-shaped" is clear and definite and the claims comply with the requirements of the second paragraph of 35 U.S.C. § 112.

Regarding the rejection as applied to claims 14 and 33 as being indefinite because they contain the repetitive phrase of "for forming an adhesive layer", in amended Claims 14 and 33 the second occurrence of this phrase has been deleted.

Removal of the 35 U.S.C. 112, second paragraph, rejection is in order.

Claim 5 is objected to because claim 5 defines the diameter of the thread in terms of micrometers. The Office is suggesting that the thread be defined in terms of denier. This objection is now moot in view of the amendments to the claims which delete the "thread-shaped security element".

Claims 1-3, 5, 10-13, 15-22, 24 and 29-32 are rejected under 35 U.S.C. §102(b) as being anticipated by Nitta (U.S. Patent No. 6,028,028). Claims 4, 6-9, 14, 23, 25-28 and 33 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nitta in view of Isherwood et al. (U.S. Patent No. 6,199,911) ("Isherwood") and further in view of Washburn et al. (U.S. Patent No. 6,139,065) ("Washburn"). Reconsideration and removal of these rejections is respectfully requested.

Nitta discloses a recording sheet which is stated to have excellent printability, water-proofness, tear resistance, sewability and non-curling properties. The recording sheet comprises a support (I) with an image-recording/receiving layer (II) formed on the surface thereof, wherein the support (I) has a laminated structure comprising a woven fabric (A) or unwoven fabric (A'), an adhesive, and a stretched resin film (B).

Isherwood discloses a security element for security paper for banknotes and the like which is stated to have both aesthetic and anti-counterfeitable qualities. The security element to be wholly

or partially embedded in security paper comprises an elongated strip of a light transmitting polymeric substrate. The polymeric substrate bears a reflective metallic layer in the form of a design that comprises a repeating geometric pattern.

Washburn discloses a process for making security paper that comprises a step for embedding a filament into paper having an upper surface and a lower surface by rollers while applying pressure and heat, and imprinting a textured pattern into the filament.

In the rejection of claims 1-3, 5, 10-13, 15-22, 24 and 29-32 under 35 U.S.C. § 102, the Office alleges that Nitta teaches a paper support with a thread-shaped security element embedded therein. This position is not correct. The threads in Nitta are the warp and weft that compose the fabric, and Nitta nowhere discloses a thread-shaped security element for antifalsification. (Notwithstanding that Nitta is not relevant to the embodiment of the present invention containing a thread-shaped security element, applicants have deleted the thread-shaped security element from the

claims. The rejection as it relates to this embodiment of the invention is now moot.)

Nitta is also not relevant to the recording paper recited in amended claim 1 and the paper support recited in amended claim 20. The recording paper set forth in amended Claim 1 comprises a paper support and a recording layer formed on the paper support, wherein the paper support has a ribbon-shaped security element embedded therein. The recording paper is characterized in that the size (dimensions, thickness, etc.) and the positional relationship between the paper support and the ribbon-shaped security element are specified. The paper support for the recording paper set forth in amended Claim 20 has the same structure as in the paper support recited in amended Claim 1.

The paper support set forth in each of amended Claims 1 and 20 is clearly different from and not anticipated by the support of the recording sheet of Nitta for the reasons described below.

First, Nitta nowhere discloses a ribbon-shaped security element for antifalsification.

Second, the structure of the support (I) disclosed in Nitta has a laminated structure comprising a woven fabric (A) or unwoven fabric (A') and a stretched resin film (B). On the other hand, the amended Claims 1 and 20 have a structure wherein a ribbon-shaped security element is wholly embedded in the paper support (see, for example, Figs. 1 and 2 of the present specification).

Third, the support (I) disclosed in Nitta comprises a woven fabric (A) or nonwoven fabric (A') and a stretched resin film (B), and does not contain paper. Therefore, it differs from the inventions of the amended Claims 1 and 20 that recite a paper support.

Nitta is insufficient to support a case of anticipation of claims 1 and 20 and the claims dependent thereon under 35 U.S.C. § 102 and removal of the 35 U.S.C. § 102 rejection is in order.

Regarding the rejection under 35 U.S.C. §103(a), the rejection relies on Nitta as the primary reference. The secondary Isherwood and Washburn references have been cited only as teaching the elements recited in the rejected dependent claims. The rejection

is improper because the claims on which the rejected claims depend have been shown, for the reasons explained above, to be patentable over the disclosure of Nitta. The dependent claims, therefore, are prima facie patentable. Moreover, Isherwood and Washburn have not been cited for and are insufficient to overcome the above-described insufficiencies of Nitta.

Removal of the 35 U.S.C. § 103(a) ground of rejection is in order.

The foregoing is believed to be a complete and proper response to the Office Action dated October 24, 2002, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attachment is captioned **"VERSION WITH MARKINGS TO SHOW CHANGES MADE."**

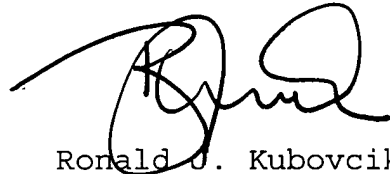
PATENT APPLN. NO. 09/900,979
RESPONSE UNDER 37 C.F.R. § 1.111

**PATENT
NON-FINAL**

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 2-5, 15, 17-18 and 21-24 have been canceled.

Claims 1, 9, 14, 16, 20, 28, 30 and 33 have been amended as follows:

1. (Amended) A recording paper comprising a paper support having a front surface and a rear surface opposite the front surface and a recording layer formed on the front surface of the paper support, the paper support having a ribbon-shaped security element embedded therein[, ~~the security element being a thread-shaped security element or a ribbon shaped security element, and the paper support having a thickness at least 3 times the diameter of the thread shaped security element or at least 3 times the thickness of the ribbon shaped security element.~~]; the ribbon-shaped security element having a front surface facing the front surface of the paper support and a rear surface facing the rear

surface of the paper support, and the recording paper being characterized in that:

the distance from the front surface of the paper support to the front surface of the security element is 1 to 7 times the thickness of the security element;

the distance from the rear surface of the paper support to the rear surface of the ribbon-shaped security element is 0.5 to 6 times the thickness of the security element;

the thickness of the paper support is 4 times to 10 times the thickness of the ribbon-shaped security element;

the thickness of the paper support is 40 to 250 μ m;

the ribbon-shaped security element has a width of 0.3 mm to 20 mm and a thickness of 10 μ m to 80 μ m; and

the recording layer is a heat-sensitive recording layer comprising an electron-donating compound, an electron- accepting compound and a binder.

9. (Amended) The recording paper according to claim 1, in which the security element is a ribbon-shaped security element comprising a synthetic resin film or a metallized synthetic resin film [~~the ribbon-shaped security element having a width of about 0.3 mm to about 20 mm and a thickness of about 10 μ m to about 80 μ m]~~].

14. (Amended) The recording paper according to claim 10, in which the adhesive layer is prepared by uniformly dispersing an adhesive, and if desired at least one member selected from the group consisting of a fluorescent dye, a fluorescent pigment and a luminescent pigment, in water or an organic solvent serving as a medium to obtain a coating composition for forming an adhesive layer, applying the resulting coating composition [~~for forming an adhesive layer~~] to [~~the thread shaped security element or~~] the ribbon-shaped security element in an amount of about 1 g/m² to about 10 g/m² on a dry weight basis, and drying the resulting coating.

16. (Amended) The recording paper according to ~~[claim 15]~~
claim 1, in which a protective layer containing a binder having a
film forming ability is formed on the heat-sensitive recording
layer.

20. (Amended) A paper support for a recording paper, the
paper support having a front surface and a rear surface opposite
the front surface and having a ribbon-shaped security element
embedded therein~~[, the security element being a thread shaped~~
~~security element or a ribbon shaped security element, and the paper~~
~~support having a thickness at least 3 times the diameter of the~~
~~thread shaped security element or at least 3 times the thickness of~~
~~the ribbon shaped security element.];~~ the ribbon-shaped security
element having a front surface facing the front surface of the
paper support and a rear surface facing the rear surface of the
paper support, and the recording paper being characterized in that:

the distance from the front surface of the paper support to the front surface of the security element is 1 to 7 times the thickness of the security element;

the distance from the rear surface of the paper support to the rear surface of the ribbon-shaped security element is 0.5 to 6 times the thickness of the security element;

the thickness of the paper support is 4 times to 10 times the thickness of the ribbon-shaped security element;

the thickness of the paper support is 40 to 250 μ m; and

the ribbon-shaped security element has a width of 0.3 mm to 20 mm and a thickness of 10 μ m to 80 μ m.

28. (Amended) The paper support according to claim 20, in which the security element is a ribbon-shaped security element comprising a synthetic resin film or a metallized synthetic resin film [~~, the ribbon-shaped security element having a width of about 0.3 mm to about 20 mm and a thickness of about 10 μ m to about 80 μ m]~~ .

30. (Amended) The paper support according to claim 29, in which the adhesive layer adheres to the paper support by contact of ~~[the security element having]~~ the adhesive layer and water when the security element having the adhesive layer is embedded within the paper support, or by the heat applied when the paper is dried after production, or by the pressure applied during supercalendering.

33. (Amended) The paper support according to claim 29, in which the adhesive layer is prepared by uniformly dispersing an adhesive, and if desired at least one member selected from the group consisting of a fluorescent dye, a fluorescent pigment and a luminescent pigment, in water or an organic solvent serving as a ~~[medium]~~ medium to obtain a coating composition for forming an adhesive layer, applying the resulting coating composition ~~[for forming an adhesive layer]~~ to ~~[the thread shaped security element or]~~ the ribbon-shaped security element in an amount of about 1 g/m² to about 10 g/m² on a dry weight basis, and drying the resulting coating.